

Delineation of Level IV Ecoregions of California: A Tool for Understanding and Managing Environmental Resources in the Bay–Delta Basin

Robert K Hall

Public Comments

No public comments were received for this proposal.

Technical Synthesis Panel Review

Proposal Title

#0339: Delineation of Level IV Ecoregions of California: A Tool for Understanding and Managing Environmental Resources in the Bay-Delta Basin

Final Panel Rating
inadequate

Technical Synthesis Panel (Primary) Review

TSP Primary Reviewer's Evaluation Summary And Rating:

This proposal seeks funds to develop a Level IV Ecoregions map for the state of California. It provides justification for ecoregion mapping at a very abstract level, with essentially no discussion of methods or issues specific to California. The proposal received three reviews, resulting in ratings of POOR, POOR, and FAIR. All the reviewers found that the purpose, methods, and value of the project were not adequately described (or described at all, in some cases). Two questioned how the map might help CALFED specifically, and neither found this question answered. One reviewer questioned whether this is true scientific research, particularly because no hypotheses are stated. This reviewer also questioned whether this work should be supported by CALFED or by other state and federal agencies. All three reviewers found the approach to be quite vague, without sufficient discussion of how data will be collected, decisions made, and how different approaches balanced in the California context. One reviewer stressed the importance of the digital version of the map and found little discussion of essential detail about how that map would be made and how its metadata managed. Two reviewers stated that the two review meetings proposed are insufficient for the purpose and one expressed concern that most of the work producing the map appeared to be the responsibility of an

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unnamed contractor. All reviewers agreed that the end product, if successfully completed, would be useful. But two questioned whether this benefit would accrue more to state agencies than to CALFED. One reviewer found insufficient representation on terrestrial biology and another questioned the absence of a cartographer on the team. The two reviewers giving POOR ratings started that the case was not made for why this study is a priority for CALFED funding, nor were the methods adequately explained. The reviewer giving a FAIR rating did not think the project is really scientific research and, as the others, questioned its priority for CALFED funding. The investigators have failed to provide an adequate justification of the work as a CALFED priority and have not given a description of the methods and issues as they would be applied in California. This is somewhat balanced by the experience of some of the investigators in producing ecoregion maps, but, in the end, that is poor justification for giving an adequate mark to this proposal.

Additional Comments:

This proposal seeks funds to develop a Level IV Ecoregions map for the state of California. It provides justification for ecoregion mapping at a very abstract level, with essentially no discussion of methods or issues specific to California. The proposal received three reviews, resulting in ratings of POOR, POOR, and FAIR. All the reviewers found that the purpose, methods, and value of the project were not adequately described (or described at all, in some cases). Two questioned how the map might help CALFED specifically, and neither found this question answered. One reviewer questioned whether this is true scientific research, particularly because no hypotheses are stated. This reviewer also questioned whether this work should be supported by CALFED or by other state and federal agencies. All three reviewers found the approach to be quite vague, without sufficient discussion of how data will be collected, decisions made, and how different approaches balanced in the California context. One reviewer stressed the importance of the digital version of the map and found little discussion of essential detail about how that map would be

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Technical Synthesis Panel (Discussion) Review

TSP Observations, Findings And Recommendations:

The proposal justification was abstract, with little description of how ecoregion mapping would be implemented in California. There is inadequate linkage of the project's products to CBDA's needs. The methodology is poorly-described and one external reviewer commented that, though the products will be digital maps, there is little evidence of expertise with this technology on the project team. There are no hypotheses identified here. The products will likely be useful to managers, decision-makers, and researchers in the area; however, the panel did not believe that funding this project under this PSP would be appropriate, especially given the proposal's inadequacies. Calfed currently has ecoregions defined at a resolution finer than through EPA Level III; the relation of the proposed mapping to current Calfed ecoregions

Technical Synthesis Panel Review

is important and was not explained.

Rating: Inadequate

Technical Review #1

proposal title: Delineation of Level IV Ecoregions of California: A Tool for Understanding and Managing Environmental Resources in the Bay-Delta Basin

Review Form

Goals

Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the idea timely and important?

Comments	The goal of the project is very clear, although its value is not clearly described.
Rating	poor

Justification

Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

Comments	One of the key arguments made by the proponents is that California is one of the few states that lacks an ecoregion delineation. This alone is insufficient justification for why we need such a delineation here. The proponents offer a number of additional values for an accepted delineation, however, they fail to articulate any areas where NOT having an accepted delineation has caused significant problems in the management of natural resources.
Rating	fair

Technical Review #1

Approach

Is the approach well designed and appropriate for meeting the objectives of the project? Is the approach feasible? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology, or approaches? Will the information ultimately be useful to decision makers?

Comments	<p>The approach is poorly described. The authors cite 6 different references for how to delineate ecoregions, but make no effort to explain to integrate the various methods. They also fail to describe how data will be collected, or how decisions will be made.</p> <p>Since any delineation is highly interpretive (and subjective) it is critical that broad agreement is reached on how specifically delineations are to be made.</p>
Rating	fair

Feasibility

Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives and within the grasp of authors?

Comments	<p>The approach is barely documented, although completely feasible. However, the authors allow for only 2 "review" meetings of undisclosed persons or agencies.</p> <p>My personal experience using ecoregions for state-wide regulatory management and land-use planning suggests that such delineations should receive broad agreement if they are to be widely accepted. The authors have failed to recognize the importance of marketing such a delineation widely to get full agreement for the system.</p> <p>Given the broad potential for various applications, it is important that various constituents have the</p>
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Technical Review #1

	<p>opportunity to guide exactly how delineation decisions will be made. Different constituents are likely to have different opinions, and failure to flush these out could compromise the value of the end product.</p> <p>Additionally, there appears to be limited sponsorship of the idea among key regulatory agencies. Unless there is support among key leaders, it is unclear that such a delineation will be adapted.</p>
Rating	poor

Monitoring

If applicable, is monitoring appropriately designed (pre–post comparisons; treatment–control comparisons)? Are there plans to interpret monitoring data or otherwise develop information?

Comments	
Rating	not applicable

Products

Are products of value likely from the project? Are contributions to larger data management systems relevant and considered? Are interpretive (or interpretable) outcomes likely from the project?

Comments	<p>My experience in developing management strategies in other states indicates that ecoregions can be very helpful. They not only provide delineations to improve the resolution of regulatory standards and practices, they also aid greatly in stratifying monitoring studies in a statistically valid fashion.</p> <p>The authors recognize the value of broad distribution of the product, and have correctly identified the value of both paper and electronic distribution.</p>
Rating	good

Technical Review #1

Additional Comments

Comments

Capabilities

What is the track record of authors in terms of past performance? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

Comments	Its not clear that the project team has the appropriate disciplinary mix necessary to complete the project. It is heavily weighted to aquatic scientists, with limited terrestrial biology or botonical expertise.
Rating	fair

Budget

Is the budget reasonable and adequate for the work proposed?

Comments	The budget appears a bit excessive for such a task. The justification for the budget is poor, and the tasks are not well described. Much of the input data for delineation at this scale is probably best obtained via existing GIS databases and/or remote sensing data, and could probably be obtained fairly easily.
Rating	poor

Overall

Provide a brief explanation of your summary rating.

Comments	The proposal fails to make the case for why this study should be a priority for funding and it does little to explain specifically how it would be done. While the product would likely be valuable, I believe that there are more
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Technical Review #1

	effecient and effective approaches that could arrive at a good product with broad acceptance.
Rating	poor

Technical Review #2

proposal title: Delineation of Level IV Ecoregions of California: A Tool for Understanding and Managing Environmental Resources in the Bay–Delta Basin

Review Form

Goals

Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the idea timely and important?

Comments	The authors propose to make a classification of ecoregions because this will apparently help other CALFED projects. The authors fail to specify the present weaknesses of those projects and fail to describe how a map of ecoregions will cure those deficiencies.
Rating	fair

Justification

Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full–scale implementation project justified?

Comments	It the authors bother to make this map, it had better be well integrated with the wider GIS database and have extensive metadata. I find no plan to do this. The proposal does not convince me that its authors know much about the wider database or about metadata.
Rating	fair

Approach

Is the approach well designed and appropriate for meeting the objectives of the project? Is the approach feasible? Are results likely to add to the base of knowledge? Is the project likely to

Technical Review #2

generate novel information, methodology, or approaches? Will the information ultimately be useful to decision makers?

Comments	The definition for each ecoregion will be based on meetings with participating scientists and resource managers. I would guess that each person has many various goals for this map thus it is not clear that one map will serve particularly well for any single goal. The authors propose a scale of 1:250000, which is an expression of scale make sense only in terms of paper maps. Clearly the emphasis should be on digital maps that would be useful in GIS, so the ratio expression of scale is meaningless because digital information can be rescaled by the movement of a computer mouse. The proposal must be express scale in terms of minimum mapping unit. The proposal fails to address the most basic questions of digital map production. Will the maps be vector or raster? In what form will they be on-line: ArcInfo files (which might be very helpful) or a scanned PDF files (which would be almost useless)? I am astonished concerning the lack of detail about the digital product. This product should be nested in the ecoregions of the other levels since the proposal claims that ecoregions are hierarchical, but the proposal lacks good description of the nature of those other maps and their digital forms?
Rating	fair

Feasibility

Is the approach fully documented and technically feasible? What is the likelihood of success?
Is the scale of the project consistent with the objectives and within the grasp of authors?

Comments	The proposal seems to suggest that if a group of ecologists and managers meet in a room in order to envision the categories of a map, then the most
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Technical Review #2

	important work is finished; and the actual process of making the map can be assigned to a contractor who simply goes through the mechanics of map production. This is a formula for disaster. It is quite a complex process to generate a map that will ultimately be useful for research.
Rating	fair

Monitoring

If applicable, is monitoring appropriately designed (pre–post comparisons; treatment–control comparisons)? Are there plans to interpret monitoring data or otherwise develop information?

Comments	The proposal lacks any sophisticated description of metadata, whereas any map production exercise should generate metadata that is in compliance with extensive and detailed federal guidelines. A map that lacks sophisticated metadata is a useless map.
Rating	fair

Products

Are products of value likely from the project? Are contributions to larger data management systems relevant and considered? Are interpretive (or interpretable) outcomes likely from the project?

Comments	Paper maps are essentially useless for research. The project proposes to make digital versions of the maps available, but the proposal lacks any detail of a plan to do this. Based on the information in the proposal, I am not convinced that the authors know the level of work necessary to make high quality GIS-based maps that will be useful for research.
Rating	poor

Technical Review #2

Additional Comments

Comments	In my experience, there are already too many paper maps that are somewhat related to an important question, but do not give exactly what is needed for a specific question. I think that this proposal will generate yet another such map.
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Capabilities

What is the track record of authors in terms of past performance? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

Comments	Given that the primary product will be a map, I am astonished that there are no cartographers on the proposal. There is only one GIS person, who is an unnamed contractor. Nearly all of the work and budget is attributable to this unnamed person.
Rating	poor

Budget

Is the budget reasonable and adequate for the work proposed?

Comments	The costs are reasonable for the work that is proposed, but given that I do not think the project is worth doing, it is difficult for me to respond to this question. Few researchers use paper maps, so I do not understand why so much money is being used for paper printing.
Rating	good

Overall

Provide a brief explanation of your summary rating.

Comments	
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Technical Review #2

	If the project delivers much more than what is proposed, then the project might be worthwhile. Even if CALFED has much money, I would suggest that CALFED solicit additional applications before funding this one.
Rating	poor

Technical Review #3

proposal title: Delineation of Level IV Ecoregions of California: A Tool for Understanding and Managing Environmental Resources in the Bay-Delta Basin

Review Form

Goals

Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the idea timely and important?

Comments	<p>The goal of this project is that of developing a Level IV classification map for the entire state of California. The idea being that with a more detailed delineation of ecoregions, CALFED will be able to more effectively deal with water quality issues in the Bay-Delta region. Specific objectives are not really further defined. No hypotheses are presented as this project does not really constitute scientific research.</p> <p>Is the idea timely and important? Yes it is important for resource managers for the State of California. The argument that it would be something that should be supported by CALFED, rather than other State and Federal Agencies in California is a bit of a stretch.</p>
Rating	fair

Justification

Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

Comments	<p>As noted above, I do not think the project is well justified in terms of benefits to CALFED. It seems that the goal of better delineating ecoregions for the</p>
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Technical Review #3

	entire State of California is a bit tangential to the goals of CALFED. The rationale given is that ecoregion delineation will allow for better assessment and monitoring. This is likely true but it is also somewhat vague as to how this improved assessment and monitoring will be linked to development of a map of ecoregions.
Rating	fair

Approach

Is the approach well designed and appropriate for meeting the objectives of the project? Is the approach feasible? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology, or approaches? Will the information ultimately be useful to decision makers?

Comments	<p>The approach as to how ecoregions will be developed is surprisingly vague. References are provided that give more detail as to how the process works but there is not much detail in the proposal. The basic approach seems to be that of organizing meetings with State and Federal organizations and working to develop consensus and the ecoregion delineation.</p> <p>Although not much detail has been provided, members of the team are experts on the development of ecoregions and we can assume that they know what they are doing. The project would generate information that would be of broad use for all natural resource managers in the State of California. It would be a useful product. The information would be useful to decision makers.</p>
Rating	fair

Feasibility

Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives and within the grasp of authors?

Technical Review #3

Comments	The approach has not been fully documented in this proposal but it does not seem overly complicated. A large part of the effort will be that of consensus building. The likely hood of succes is strong. The scale of the project is consistent with the abilities and grasp of the authors.
Rating	good

Monitoring

If applicable, is monitoring appropriately designed (pre–post comparisons; treatment–control comparisons)? Are there plans to interpret monitoring data or otherwise develop information?

Comments	No monitoring has been proposed as part of this project
Rating	not applicable

Products

Are products of value likely from the project? Are contributions to larger data management systems relevant and considered? Are interpretive (or interpretable) outcomes likely from the project?

Comments	The project would produce a level IV map of the ecoregions of the State of California. This would be available as hard copy and digital format. It would be a very valuable product.
Rating	very good

Additional Comments

Comments

Capabilities

What is the track record of authors in terms of past performance? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the

Technical Review #3

infrastructure and other aspects of support necessary to accomplish the project?

Comments	The authors seem to be very capable and very experienced.
Rating	very good

Budget

Is the budget reasonable and adequate for the work proposed?

Comments	The budget is resonable and adequate for the work proposed.
Rating	very good

Overall

Provide a brief explanation of your summary rating.

Comments	<p>Overall I rate the project only as a fair. There are two main reasons for this. First of all the proposed project is not really scientific research nor is it particularly ground breaking. On the other hand a useful product will be produced that will be of value for the entire State of California.</p> <p>Second--this project seems only tangentially related to the goals and objectives of CALFED.</p> <p>The proposal was well written but quite brief and did not provide much in the way of details as to the methodology.</p> <p>The team appears to be competent and well qualified.</p>
Rating	fair